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JULY, 1935

# American FRUIT GROWER

THE NATIONAL FRUIT MAGAZINE

## In this issue

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•

Spraying & Dusting PEACHES

•

National Apple Institute Campaign

•

Who's Who in Pomology NEW YORK •

•

ALSO
Nationwide News
State Horticultural News
American Pomology
Results of Other Nut Contests

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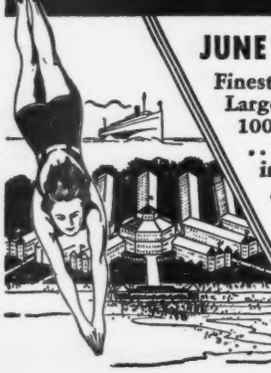

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## Nationwide News

A recent survey of Georgia peach orchards shows that there is a decrease of over a million bearing trees, which has taken place during the past 12 months. The 1935 crop will pack out well over 10,000 carloads of fruit, a good share of which has already been marketed.

▼ ▼ ▼

An amended market agreement for growers and shippers of California fresh deciduous fruits (except apples) has been approved by the A.A.A. The major difference in comparison with the former agreement is the changing of the control committee from an organization of shippers to one in which growers are in the majority. The single proration committee is also replaced by a commodity committee for each of the six principal fruits included in the agreement.

▼ ▼ ▼

When the I.C.C. denied the railroads' application for rate increases on fruits and other commodities, the railroads were warned that with the motor truck as their greatest competitor "any increase in fruit and vegetable rates undoubtedly would result in greater diversion from rail transportation."

▼ ▼ ▼

In a recent count of A.A.A. activities, it was reported that the administration now has 25 marketing agreements completed and 10 more in various stages of completion covering general crops. Grades are becoming an increasingly important factor in these agreements, in spite of the recent Supreme Court decision which requires that it must be shown "in some definite dollars and cents way whether grades are justifiable."

▼ ▼ ▼

Within five or six years, the east shore of Flathead Lake, Mont., is destined to become the largest exclusive sweet cherry district in the world. Even without the planting of another tree, the future annual production is forecast to be greater than the combined districts of Wenatchee and Yakima in Washington. As yet, only 5 per cent of this cherry acreage is bearing fruit, but it produced approximately 10 carloads of the Bing and Lambert varieties this past season.

▼ ▼ ▼

The Kadota Fig Gardens of Waterford, Calif., are freezing figs from 10 degrees F. to zero for the high class eastern market. They are shipped in refrigerated cars or steamships, and up to 1000 to 2000 miles by refrigerated trucks.

The National Fruit Magazine of America

# American FRUIT GROWER

Representing a Billion Dollar Industry

JULY Vol. 55 (Title Registered in U.S. Patent Office) No. 7 1935

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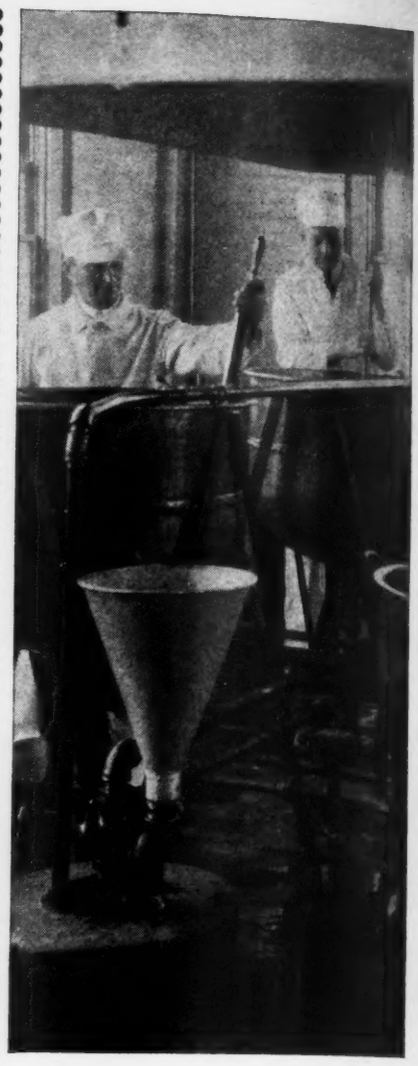
## AN EXPLANATION AND A MESSAGE OF THANKS

SINCE the publication of *American Fruit Grower's* Directory Edition, we have received thousands of letters from readers expressing their appreciation of the helpful reference material compiled to aid them in their orchard operations.

The friendly nature of these letters is the finest of tributes to this publication. For more than 50 years *American Fruit Grower* has zealously served the best interests of the fruit industry and the men engaged in it. Today, as through the years, this magazine feels a real responsibility to its readers, a responsibility which entails the prompt answering of letters. For once, however, we must ask the indulgence of our correspondents. The huge number of letters and requests for information from our great family of readers makes it impossible for us to answer them immediately. Requests for the various booklets and catalogs which we offered to obtain for our readers are being handled as fast as possible, however, in the order in which they were received and with the earnest cooperation of our advertisers will soon reach those desiring them.

To all who wrote us we extend our heartfelt thanks, and a friendly urging to "write again soon."



# A PICTORIAL REVIEW of FRUIT PROCESSING

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Above—Scenes in modern canning factory where present-day methods make possible the preservation of millions of cases of fruit annually.

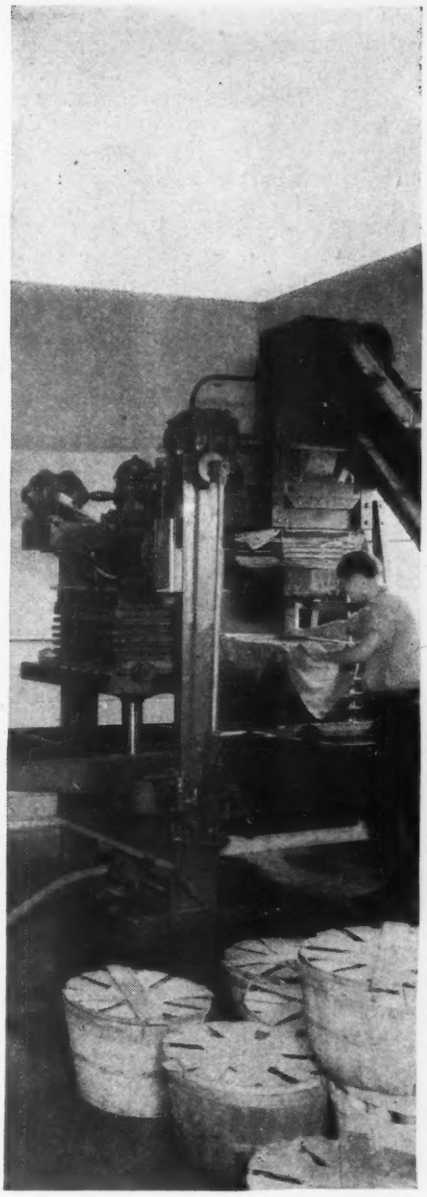
Left—An attractive display of cider which is produced and sold at the orchard. This type of by-product manufacturing is becoming increasingly popular in all fruit growing sections.

# THE PRODUCTION OF APPLE JUICES

## CONCENTRATES AND SIRUPS

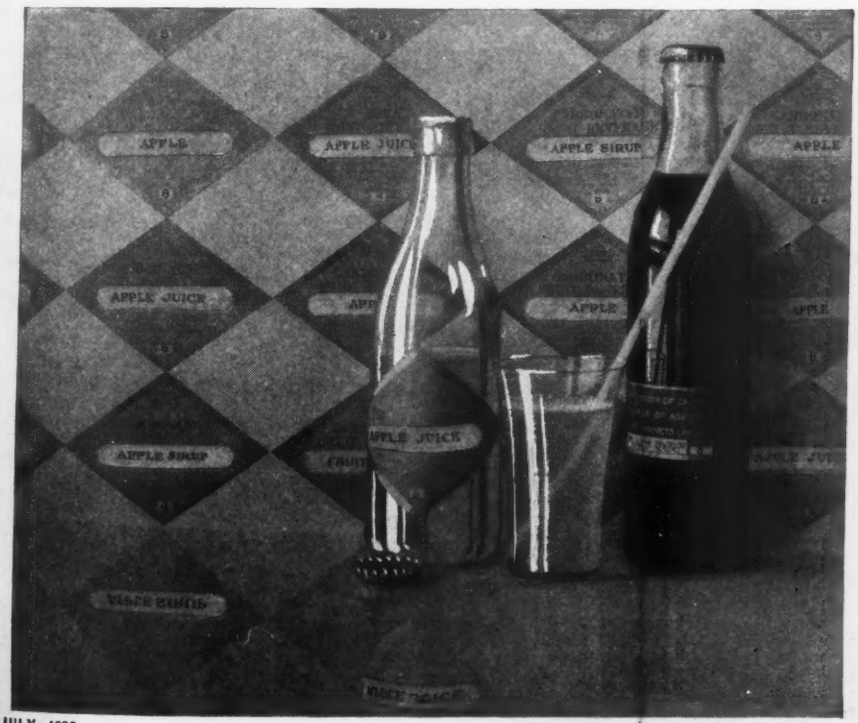
By H. D. POORE

LABORATORY OF FRUIT AND VEGETABLE CHEMISTRY, BUREAU OF CHEMISTRY AND SOILS, U. S. DEPARTMENT OF AGRICULTURE, LOS ANGELES, CALIFORNIA.



THE utilization of cull apples has become an important problem of the apple industry in Washington in recent years. With the shipment of more than 56,000 carloads of packed apples in 1930, the disposal of the remainder of the crop, which probably amounts to about 10 per cent of the total production, became still more serious. Nine hundred carloads of culls were also shipped that year from the Wenatchee Valley alone, which produces about 40 per cent of the Washington crop, a large quantity was utilized locally for vinegar, drying, etc., and in addition thousands of tons were allowed to waste. Owing to the efficient spraying methods practiced in the state, these cull apples are sound and generally of good quality, but they do not pass the standard of the third or C grade of fruit because of off size or shape or surface defects. In some years of over-production the disposal of even C grade fruit has been unprofitable.

Work on apple products has been carried on at the Los Angeles Laboratory of the Food Research Division, Bureau of Chemistry and Soils, at various times since 1921, and during the fall seasons of 1932 and 1933 a temporary laboratory was established at Wenatchee, Wash. This paper summarizes the work of both laboratories, including the work on the production of frozen, pasteurized, germ-proof filtered and carbonated juices from 10 different varieties of apples, and also concentrates and sirups of high solids content and good flavor, which did not gel or require sterilization.




There is a year-round demand for bottled or canned apple juice or sirup—provided they are brilliantly clear and free from sediment and will keep. (Above) A modern type cider press.

The remarkable increase in the consumption of fruit and vegetable juices in recent years has created a demand for apple juice at periods other than the fall harvesting season. Ordinary methods of filtration have been unsatisfactory for bottled and canned apple juices, as invariably an objectionable sediment appears within several weeks. It has been only in the last few years that brilliantly clear juices have appeared on the market.

In our first experiments on bottled apple juice, carried out in the Los Angeles Laboratory in 1921, diatomaceous earth was used for filtering

and a tubular flash pasteurizer for sterilizing at temperatures ranging from 68° to 85° C (154.4 to 185°F). These experiments showed that the flavor was only slightly affected, but the clear juice gradually deposited a sediment, which prevented its acceptance by the public. The juice blended well with other fruit juices, especially those of loganberry and pomegranate, without the addition of sugar[21].

The investigations of Gore and others[3, 9, 11, 24] on the preservation of apple juice by various methods have generally yielded products which, although of good flavor, could not always be depended upon to remain clear after several months' storage. Some of the methods require considerable time and equipment and consequently involve added expense.

The introduction of enzymes for the clarification of fruit juices has eliminated much of the previous difficulty in preserving them. In 1912 Warcollier[25] recommended that the enzyme pectase naturally present in apple juice be allowed to coagulate the pectins. Mehlitz[19, 20] clarified centrifuged juice with an enzyme which converted protein and starch colloids into simpler compounds. Kertesz[16] has developed the so-called pectinol enzyme process, which uses pectase obtained from the mold *Pencillium glaucum*. It acts principally on the soluble pectin to convert it into sugars and other substances, including some insoluble material. The insoluble material precipitates out together with turbid colloidal substances that have lost the protective influence of the pectin. Several workers have reported on the pectinol method[1, 2, 4, 8, 18] some of them however unfavorably because of after sedimentation.

Besides the pasteurization method for the preservation of the clarified apple juice, Mehlitz[19, 20] Carpenter, et al[5] and Davis[10] have sterilized the cold juice with the Seitz E. K. germproofing filter. The latter has been in use in Europe for several years but has only recently been employed in this country.

Gore[13] reported in 1915 that fruit juices could be kept in freezing storage at —10°C (14°F) for many months without marked change in composition or flavor. Work on apple juice was included in the project begun at this laboratory in 1930 on the quick freezing of various fruit products. The juice stored at —13.9°C (7°F) in crown cap bottles, vacuum-closure glass jars and tin cans for more than a year retained the characteristics of the fresh juice so well that there was no noticeable difference in color and flavor[7].

Apple juice has been carbonated and distributed in some sections of the country in recent years. For the bottler, however, a concentrate that can be used with carbonated water is desirable in order to conform to the general practices of the bottling plant. Concentration by slow freezing and separation of the ice crystals by means of a centrifuge[13] entails some loss of the product, and is more expensive than evaporation under a vacuum[9, 10, 15]. The latter process, however, yields concentrates from most fruit juices lacking in flavor and aroma, unless the volatile esters and other flavoring constituents that pass over in the first fractions of the distillate are collected and mixed back with the concentrate[6, 17]. Power and Chesnut[22,23] found that the odorous constituents of the apple consist chiefly of the amyl esters of formic, acetic, and caproic acids, with a very small amount of caprylic ester, a considerable proportion of acetaldehyde, and a trace of geraniol.

Gore[12, 14] developed a process for making apple sirup by neutralizing most of the acid before concentrating, but it also lacked the characteristic apple flavor because of the escape of the volatile constituents. Another difficulty with most apple concentrates and sirups has been the formation of a gel if the process is carried to the point where the percentage of pectin naturally present in the juice becomes too great. In order to avoid this the total solids have generally been held between 55 and 65 per cent[6], which however necessitates sterilization and is not high enough to prevent mold growth when the concentrate is exposed in open containers.

Table 1. Analyses of Apple Juices

| Variety | 1932 Date Pressed and analyzed | 1932 Brix Degrees | 1932 Acid (as malic) Per cent | 1933 Date Pressed and analyzed | 1933 Brix Degrees | 1933 Acid (as malic) Per cent |
|---|---|---|---|---|---|---|
| Delicious | 9-30 | 12.7 | 0.23 | 10-30 | 12.2 | 0.26 |
| " | 10-31 | 14.8 | 0.26 | 12- 6 | 12.7 | 0.26 |
| Jonathan | 10- 4 | 14.0 | 0.66 | | | |
| " | 10-28 | 14.7 | 0.65 | | | |
| Equal parts of Delicious and Jonathan | 10- 6 | 13.6 | 0.42 | | | |
| Winesap | 10- 8 | 14.2 | 0.67 | 10-25 | 13.8 | 0.63 |
| " | 11- 2 | 14.6 | 0.60 | 11- 6 | 12.5 | 0.56 |
| " | 11- 7 | 13.8 | 0.47 | 11-13 | 13.8 | 0.59 |
| " | | | | 11-16 | 13.5 | 0.59 |
| " | | | | 11-23 | 14.5 | 0.58 |
| Spitzenburg | 10-11 | 13.3 | 0.48 | 11-27 | 14.5 | 0.66 |
| Rome Beauty | 10-13 | 13.5 | 0.53 | 10-23 | 12.4 | 0.49 |
| " " | | | | 11- 8 | 12.1 | 0.43 |
| " " | | | | 12- 4 | 12.4 | 0.47 |
| Pearmain | 10-15 | 12.5 | 0.40 | | | |
| Yellow Newtown | 10-18 | 13.3 | 0.60 | | | |
| Winter Banana | 10-21 | 11.8 | 0.40 | | | |
| Arkansas Black | 10-21 | 13.5 | 0.46 | | | |
| Stayman | 10-25 | 13.0 | 0.42 | 11- 1 | 13.6 | 0.59 |
| " | 10-26 | 13.4 | 0.40 | | | |

## Analysis of Juice

Cull apples that had been washed to remove spray residues were obtained from Wenatchee packing houses. Part of the fruit was stored at —1.1°C (30°F) for use after the harvesting season. A double barrel cider mill with a hand operated grater and screw yielded from 116 to 147 gallons of juice per ton, depending upon the maturity of the fruit. The large hydraulic presses yield about 160 gallons. The Brix, or total solids, and the acid content of these juices are given in Table 1.

## Clarification Methods

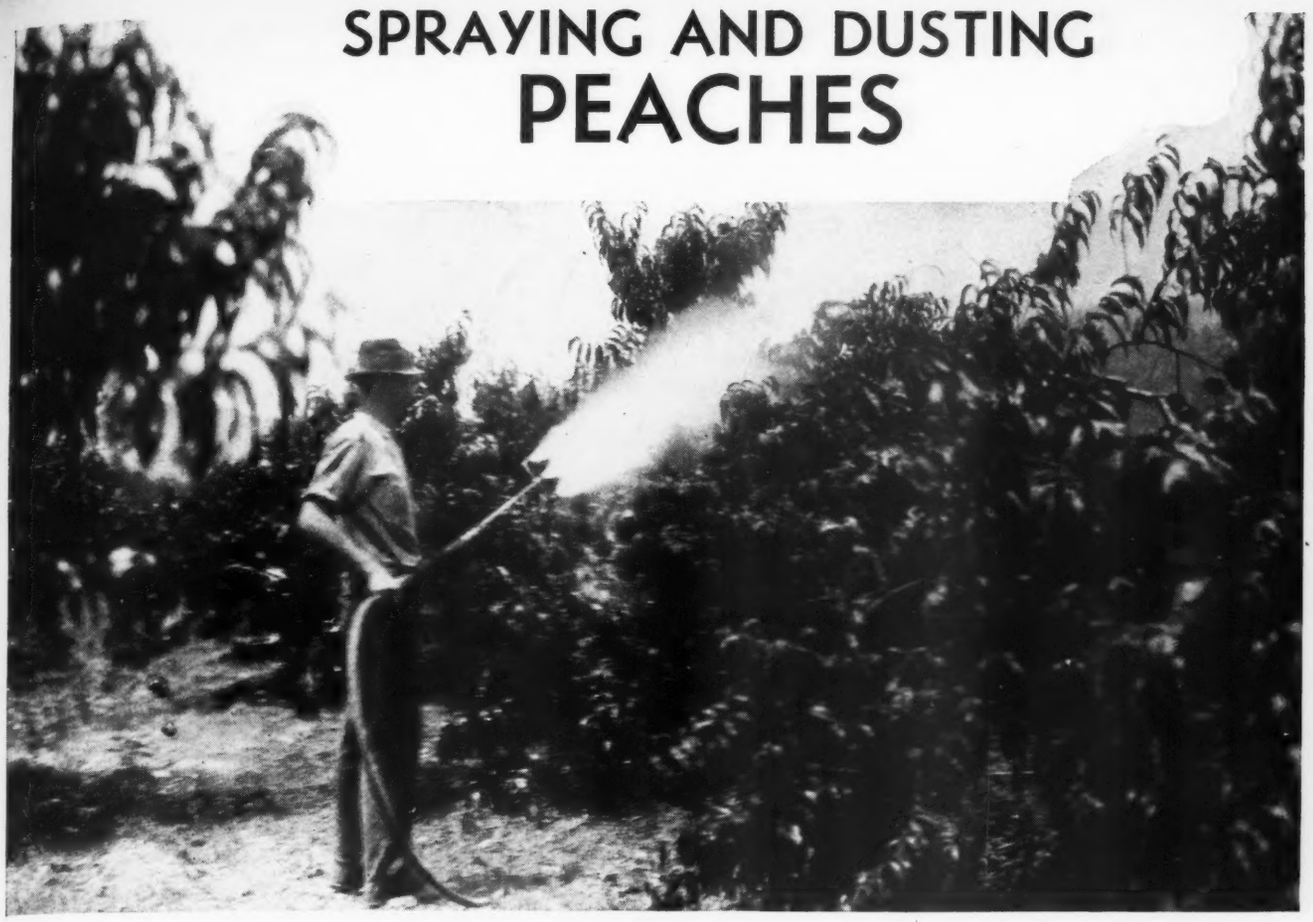
As stated in the introduction the ordinary methods of filtration, even with the newer types of diatomaceous earth such as Hy-flo Super-cel, have failed to give satisfactory results in the clarification of apple juice. Although a juice is obtained which remains clear, the difficulties of filtration, especially of cold juice, because of the large amount of insoluble and slimy material present and consequent clogging of the filtering equipment, militate against the method. The juice from ripe and soft fruit generally has more insoluble material than that from firm fruit, and it also contains more pectin in solution, which slightly increases the viscosity and difficulty of filtering.

If most of the pectin and practically all the suspended material can be removed before filtering, the juice is in a satisfactory condition for very rapid clarification, and a brilliantly clear product results. The gelatin tannin process can generally be relied upon to remove the suspended material, but as the chemical reaction involved must be accurately adjusted for each lot of juice, considerable time and experience are necessary. The supercentrifuge will remove most of the suspended material from freshly pressed juice, but enough remains to give a slight opalescence, and the soluble pectin is unaffected.

None of the foregoing methods have given results as satisfactory on the whole as has the peetase enzyme preparation known as Pectinol RA,

*(Continued on page 9)*

# SPRAYING AND DUSTING PEACHES



Spraying peaches just before they are harvested with pink sulphur. High pressure should be used in applying sulphur as a pre-harvest spray for brown rot control.

## FOR BROWN ROT CONTROL

By R. H. HURT
Virginia Agricultural Experiment Station

THE brown rot disease of peaches *(Sclerotinia cinerea)* has caused considerable damage to the peach industry in past years and there is every reason to believe that this disease will be prevalent this season, unless peach growers take proper precautions to protect the fruit on the trees near the ripening period and while it is in transit.

The brown rot fungus is primarily a disease which attacks mature fruit, but it may also attack both the flowers and twigs of peach trees. During the present season the brown rot fungus has caused some damage to both flowers and twigs, and the writer has observed some green fruit which has been infected with the brown rot organism. It is very unusual for green fruit to become infected with brown rot, especially under Virginia conditions, and such a situation is a signal for peach growers to take every reasonable precaution to protect the fruit near the harvesting period and while the fruit is in transit.

The writer has found that it is very practical under Virginia conditions to spray peaches with a sulphur fungicide just before they are harvested. There are several wettable sulphurs which may be used for this purpose but the materials which seem best adapted for pre-harvest spraying are flotation sulphur and the new pink sulphur which is now available for use either as a liquid spray or as a dust. Flotation sulphur is a well-known sulphur fungicide and needs no special discussion other than with respect to the amount to be used. Pink sulphur, on the other hand, is a new type of sulphur fungicide which has not been used extensively as a peach spray or dust and no widespread results are available as to its merits in brown rot control. This material, however, has been tested to some extent under Virginia conditions and sufficient data are available to warrant the recommendation of this type of sulphur both as a pre-harvest spray and as a dust to be applied during the packing season.

Where peach growers are equipped to remove excessive spray residue, flotation sulphur, or other fine wettable sulphurs, may be applied just before the fruit is to be harvested. If flotation sulphur is used as a pre-harvest spray, three pounds of the dry form and five pounds of the paste form for each 100 gallons of spray solution will be sufficient if properly applied. No lime should be used with either of these forms of sulphur when they are applied as a pre-harvest spray. This is also the case if any one of the other available wettable sulphurs is applied as a spray. When applying a wettable sulphur to peaches as a pre-harvest spray, the writer has found that it is better to use a rather weak concentration of the fungicide and make a very thorough application, using at least 400 pounds pressure. Even high pressure may be used if desired. In order to protect the fruit from brown rot infection, the entire surface of the peach must be covered with the fungicide. In order to accomplish this, a very thorough job of spraying with high pressure will be necessary.

As stated earlier in this article, pink sulphur is a new form of sulphur which has been brought forward to enable the peach grower to spray his fruit near the harvesting period without the risk of having excessive spray residue. The pink sulphur blends into the color of the peach and results in very little visible residue even if applied just before the peaches are harvested. This type of sulphur is no different from any other form of wettable sulphur other than the dye used to color it. The dye used to color the sulphur is harmless and there should not be any reaction against its use since its use does not conceal any damage or inferiority of the fruit.

Data which are available indicate that the pink sulphur is just as efficient as a fungicide as the wettable

*(Continued on page 13)*

# AMERICAN POMOLOGY

*A Page Conducted in the Interests of the American Pomological Society*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Edited by H. L. LANTZ, Secretary

## REVISED CODE OF NOMENCLATURE

**The Committee on Nomenclature, after eighteen months of exhaustive study and correspondence and the submission of the material to the society at the annual meeting in Grand Rapids, Mich., in December, herewith submits a revised code which it is hoped will be of great help to the entire fruit industry.**

**Members of the committee are as follows: Dr. M. J. Dorsey, Chairman, Urbana, Ill.; Dr. M. B. Davis, Dominion Horticulturist, Ottawa, Canada; and Paul Stark, Louisiana, Mo.**

**1. This code aims to establish a simple system of pomological nomenclature that shall be appropriate, dignified and stable. To this end it is urged that all persons conferring names upon new varieties of fruits endeavor to select simple and, preferably, one-word names that are fittingly expressive of some character, quality, place, person or event associated with the source, time or place of origin of the variety.**

**2. The paramount right of the originator, discoverer or introducer of a new variety to name it, within the limitations of this code, is recognized and established.**

### SCOPE OF THE CODE

**3. This code applies to all cultivated fruits, including nuts.**

### PRIORITY

**4. The name first published for a variety shall be the accepted and recognized name except when contrary to the provisions of this code, and provided that names thoroughly established in American pomological literature shall not be displaced.**

**5. A name once used in a group shall not be used again, provided that a name once established through long usage for two or more American varieties shall not be displaced for either or radically modified except when a well known synonym can be used in its place. When no such synonym is available, the varieties bearing identical names shall be distinguished by the addition of the name of the author who first described each or some other suitable distinguishing term.**

**6. Names appearing in dated publications shall have precedence over those undated, even though there be evidence that the two are of the same calendar year.**

### FORM AND SPELLING OF NAMES

**7. Names of new varieties shall be of one word preferably, but two words will be accepted. Names of existing varieties shall not be changed in such a way as to lead to confusion or loss of identity.**

**8. The spelling and pronunciation of a variety name shall be the same as that of the person, place, substance or quality from which it is derived.**

**9. A possessive noun shall not be used.**

**10. A name shall not be formed by the compounding or hyphenating of two or more existing names, but this does not prohibit the formation of a one-word name by the parts of two or more existing names. Neither Bartlett-Seckel nor Bar-Seck may be used, but Barseck is admissible.**

**11. The hyphen shall not be used between the words of a name.**

**12. Initials shall not be used as a part of a variety name—e.g., J. H. Hale.**

**13. The use of such general terms as seedling, hybrid, beurre, damson, pippin, rare-ripe, etc., shall not be permitted.**

**14. An imported variety shall retain its foreign name, provided it does not conflict with the provisions of this code or with an existing American name in the same group.**

**15. The name of a person shall not be applied to a variety during his life without his consent.**

**16. The name of a deceased person shall not be so applied except through formal action by some competent pomological body, preferably that with which the deceased was most closely associated.**

### PUBLICATION OF NAMES

**17. Publication consists (1) in the public distribution of a printed name and description or characterization of the fruit; (2) in the publication of a new name for a variety described elsewhere under a different name, number or other untenable designation, the synonym being given; (3) a varietal name may be established by current usage in the locality of its origin, when well known, and shall be considered as published and have precedence over a later printed name for the same variety.**

**18. Publication may be made in any book, bulletin, report, trade catalogue or periodical bearing date of issue, and of public distribution.**

### NAMING BUD SPORTS

**19. In naming the bud sports of recognized varieties, the names selected should as far as possible identify the new strain with the parent variety. One-word names formed by using parts of two or more existing names, or a single descriptive name either before or after the parent variety name, will be recognized.**

### RECOGNIZING TRADE USAGE

**20. Where there is a long-standing trend or trade preference for a synonym or for two names for a variety, which is not in accord with the rules of nomenclature, the situation may be reviewed thoroughly by the committee on nomenclature and where justified action may be taken to recognize usage or trade preference.**

### TYPE OF VARIETY

**21. The type of a variety is the fruit of the original plant, and type descriptions or illustrations shall be made from material produced by the original plant, or when this is not available, from a plant as near as possible to the original in asexual reproduction, and preferably grown in the same pomological region.**

### DESCRIPTION

**22. The complete description of a variety shall consist of a detailed account of the characteristics of the plant, foliage, flowers, fruit, season and habit of growth, so as to distinguish it from other varieties of similar appearance.**

### CITATION

**23. The full citation of a variety name consists of the name of the author who first described the variety and the name, page and date of the publication in which the description first appeared.**

**24. An author-citation following a name refers to the author of the original description of a variety.**

**25. Names of authors and published works may be abbreviated in accordance with the usages of this society.**

THE American Pomological Society urges the State Horticultural Societies, particularly those with strong interests in apples, pears and deciduous fruits, to give emphasis in their summer programs to sales promotion plans for the disposal of this year's crop. Why not feature clever devices adopted by various members to advertise their products? Many of these ideas are easily used by other members of the organization. Others are suggestive of still better sales methods.

---

At the summer meetings lay plans to keep faulty fruit off the markets this fall and winter. Everyone is familiar with the demoralizing effect of low grade fruit on the general price level. Summer programs should be utilized to get concerted grower action to prevent indiscriminate distribution of low grades. The winter meetings provoke indignant outcries against such practices but they are too late to prevent the danger. Prices have by then been unfavorably or ruinously affected by uncontrolled bulking of off-grades. This task needs handling with determination. The societies could correlate the power and influence of the wholesalers, inspection forces, transportation agencies, retailers and others, if they would tackle the problem energetically enough. Anyway get the subject up for discussion and action.

---

How good should a summer program be? It should be good enough so that every grower attending it whose eyes and mind are alert to learn new things, could not fail to take away some suggestion from the meeting which he can turn to profitable use in his own business. It should be good enough to effect at least one lasting action of general benefit to the fruit growing industry of the locality concerned. It should be happy enough and pleasant enough to attract the fruit growers' families. Finally it should be its own best argument for attendance next year.

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Use the summer meetings to publicize fruits. If the meeting becomes a tour, provide the local newspapers with news about it both in advance and during the time of the meetings. Work in interesting facts about the usefulness and food value of the fruits concerned. Give the names of the local people attending and the gist of the discussions. This means a live publicity man or committee. Often the secretary is too busy to attend to these matters. Why have a corking summer meeting and then lose its publicity value through failure to anticipate the needs and opportunity in this direction?

---

Summer programs this year are asked to feature the utilization of fruits. Invite authorities in home economics from your extension services, local high schools, or other sources to feature a talk or demonstration on the use of the fruits of your state or locality. It will get results and be a pleasant diversion from most summer programs.

*(Continued on page 13)*

# APPLE JUICES

*(Continued from page 6)*

and a still later type called Pectinol RA4, which, however, does not appear to act much differently. In these preparations the enzyme is adsorbed on a powdered vegetable material which can be added directly to the juice. Some of the bottled juice has been found to sediment slightly when stored for periods longer than six months, but this disadvantage is believed to be outweighed by the more favorable factors, such as ease and speed of filtering, and the use of less expensive equipment, especially by the small manufacturer.

Another powdered preparation that contains a mixture of several enzymes, but no pectase, has only a slight effect on pectin. Tests made with this showed that about five pounds per 100 gallons were required to clarify the juice in 44 hours at about 20°C (68°F), at which temperature there was some danger of fermentation. Two or three days longer were required at 10°C (50°F), at which temperature the possibility of fermentation starting before the completion of clarification was largely eliminated. If the juice contained an excessive amount of pectin it was found still more difficult to clarify. Although examinations made after six and eleven months showed the bottled pasteurized juice treated with this product remained clear, with a mere trace of sediment, it had a slight off flavor that was not present in the other lots.

In carrying on the work it was decided to press the apples in the morning and add enough pectinol at noon so that the enzyme action would be completed by the next morning. The total time available was about 21 hours, and as the juice could be warmed to about 25°C (77°F) during the day and might cool to 17°C (62.6°F) during the night, an average temperature of about 19°C (66.2°F) was used as a basis for calculating the amount of pectinol necessary. According to the table furnished by the manufacturers this was about 0.9 pound per 100 gallons. After adding and stirring occasionally for two hours, the juice was generally quite clear the next morning, with a heavy sediment and only a trace of pectin. There were some lots of juice, however, quite high in pectin, that required 1.3 or even 1.8 pounds of pectinol per 100 gallons. It was also noted that after six months' storage a slight or even heavy sediment appeared in the bottled pasteurized juices of certain lots where only 0.9 pound per 100 gallons was used. It was therefore decided to add at least

*(Continued on page 11)*

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# NATIONAL APPLE INSTITUTE CAMPAIGN AND "FRUIT FOR HEALTH"

By DEAN HALLIDAY

"TELLING" and "tasting" are the two words which it is hoped will prove the open sesame to the rediscovery of the apple, a task to which the National Apple Institute has dedicated itself.

In telling the story of the apple—modern version—the National Institute is enlisting the co-operation of magazines, newspapers and the radio. A prospectus just issued by the Institute outlines the nationwide scope of the educational program it has undertaken in behalf of apple growers, shippers and distributors. Under the personal direction of Dr. H. E. Barnard, Institute Secretary, selected lists of magazines and newspapers will be supplied, month by month, with carefully written articles about the King of Fruits. Home economics editors and writers will be supplied with clip sheets containing new and varied recipes for the everyday use of apples.

In invoking the magic power of "taste" the National Institute is depending upon the dietitians of the country for co-operation in making housewives apple conscious. The Institute is asking the aid of the 15,000 members of the American Home Economics Association in tickling the palates of the American people—with apples in various appetizing forms.

The Institute's campaign in behalf of King Apple will be based upon dietary facts and the power of suggestion. In working out its program, the Institute will find, oddly enough, that among its chief allies are certain of the country's leading manufacturers and distributors of other kinds of foods than fruits. These companies by utilizing the power of suggestion in the advertising of their various foods, have done more, perhaps, than the fruit industry itself to bring about increased consumption of various fruits in recent years.

An outstanding example of a food manufacturer whose own tremendous national advertising programs have consistently advanced the "Fruit for Health" program is the famous Kellogg Company of Battle Creek, Mich. By "eye association" and the power of suggestion in its advertising, the Kellogg Company has probably made more converts to the daily use of fruit in the diet than any other one agency or interested group in the country.

**Even this miniature black and white reproduction of a Kellogg Company advertisement "sells" fruit, but think of its "Fruit for Health" power when printed in natural colors and placed, in full page form, before millions of housewives throughout the nation.**

Season in and season out the Kellogg Company "sells" fruit to the great American home at the same time it sells its own products. A little while ago, for example, many national magazines carried a Kellogg advertisement which said, in part:

"Why not leave the monotony of heavy winter meals behind? Enjoy the delicious crispness of Kellogg's Corn Flakes For breakfast tomorrow give your family this springtime thrill. Fill the bowls with crunchy golden flakes of corn and red-ripe strawberries. Pour on milk or cream. Then taste that matchless Kellogg flavor! See how much keener, fitter, everybody feels after such a meal." Words that make the mouth water, but the picture above these words was even more appetizing.

Another Institute feature will be the development of plans for conducting local apple exhibits and shows. The week following Halloween is National Apple Week and the facilities of the Institute will be made available to local groups in planning for special events during this period. This service will be available at any other time that it may be desirable to arouse local interest in the use of apples.

## WRITE FOR PROSPECTUS OF NATIONAL APPLE INSTITUTE'S CAMPAIGN

**A prospectus has just been published describing in detail the purpose and program of the National Apple Institute. You can obtain a copy, free, by writing to Dr. H. E. Barnard, Secretary, National Apple Institute, 225 Wimmer Building, Indianapolis, Indiana, or to AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, Ohio.**

# APPLE JUICES

*(Continued from page 9)*

1.3 pounds per 100 gallons during the second season's work in Wenatchee. Unless the fruit was quite soft so that an excessive quantity of pectin was in solution in the juice, this amount of pectinol proved sufficient for at least six months' storage at room temperature, as the bottled juices remained clear during that time, with only a mere trace of sediment visible in ten of the thirteen lots. When the bottle is turned upside down and shaken this trace of sediment can be observed as a very small quantity of fine particles which do not detract from the appearance of the juice. Two lots had a very little more sediment, and one had still more, making it objectionable in appearance when shaken, but the flavor was not affected. An examination made after nine months showed seven contained a mere trace of sediment, three a very little more and three a noticeable quantity. After eleven months three had a mere trace, six a very little more, and four an amount that was objectionable, but the flavor of all was practically the same as when first bottled.

These storage tests show that the powdered Pectinol RA produces juices that remain clear for at least six months, and do not deposit an objectionable sediment except in rare cases. These results are in contrast to the work of Carpenter and Walsh[4] who when using the liquid Pectinol E reported that a deposition of amorphous material occurred after storage of from two to four weeks. Brown[1, 2] and Marshall[18] have found that the use of pectinol increases the sale of apple juices, and that it is especially economical for the small producer who cannot purchase expensive equipment. The manufacturers of pectinol have recently placed on the market Pectinol A (soluble) which after mixing with the juice does not require stirring.

After the completion of the enzyme treatment, which required about 21 hours, the clear juice was siphoned from the containers, and to about five gallons 0.5 per cent of Hy-flo Super-cel was added. This was filtered on an Alsop or Seitz type filter, using an asbestos paper pulp clarifying disc, and the remainder of the juice was then filtered on the same disc, a brilliantly clear product being obtained.

*(Reprinted by permission The Fruit Products Journal. To be continued next month.)*

(Acknowledgment—Appreciation is hereby expressed for the assistance of E. M. Chace, Chemist in Charge, Laboratory of Fruit and Vegetable Chemistry, under whose supervision the work was conducted.)

### Literature Cited


1. Brown, H. D. Processing cider with enzymes. Ohio State Hort. Soc. Proc. 65th Ann. Meeting. 1932, P. 48.
2. Brown, H. D. Manufactured apple products. Ohio State Hort. Soc. Proc. 66th Ann. meeting. 1933, P. 54.
3. Caldwell, J. S. Studies in the clarification of unfermented fruit juices. U. S. Dept. Agr. Bul. 1025 (1922).
4. Carpenter, D. C. and Walsh, W. F. The commercial processing of apple juice. N. Y. State Agr. Exp. Sta. Tech. Bul. 202 (1932). Also Fruit Products J. *13*, 37 (1933).
5. Carpenter, D. C., Pederson, C. S. and Walsh, W. F. Sterilization of fruit juices by filtration. Ind. Eng. Chem. *24*, 1218 (1932).
6. Carpenter, D. C. and Smith, E. C. Apple juice concentrate. Ind. Eng. Chem. *26*, 449 (1934).
7. Chace, E. M. and Poore, H. D. Quick freezing citrus fruit juices and other fruit products. Ind. Eng. Chem. *23*, 1109 (1931).
8. Charley, V. L. S. Non-alcoholic apple juice, Ann. Rept. Agr. and Hort. Res. Sta., Long Ashton, 1932, P. 214.
9. Cruess, W. V. and Irish, J. H. Fruit beverage investigations, Calif. Agr. Exper. Sta Bul. 359 (1923).
10. Davis, M. B. Investigations on cider and apple by-products. Fruit Products J. *12*, 260 (1933).
11. Gore, H. C. Unfermented apple juice. U. S. Dept. Agr. Bul. 118 (1908).
12. Gore, H. C. Studies on fruit juices. U. S. Dept. Agr. Bul. 241 (1915).
13. Gore, H. C. Apple sirup and concentrated cider. New products for utilizing surplus and cull apples. U. S. Dept. Agr. Yearbook, P. 227 (1914).
14. Gore, H. C. Process for making sirup from cider and other fruit juices. U. S. 1,141,458 (1915).
15. Grove, O. Apple juice concentrates. Ann. Rept. Agr. and Hort. Res. Sta., Long Ashton. 1930, P. 209. Also Fruit Products J. *13*, 74 (1933).
16. Kertesz, Z. I. A new method for enzymic clarification of unfermented apple juice. N. Y. Agr. Exp. Sta. Bul. 589 (1930).
17. Mackie, A. M. High vacuum evaporation. As used for manufacturing concentrated fruit juices Food Industries, *3*, 528 (1931).
18. Marshall, R. E. Clarifying cider increases demand from consumers. Mich. Agr. Exp. Sta. Quarterly Bul. *14*, 208 (1932).
19. Mehlitz, A. A new method for the preservation of fruit juices, sweet must, etc. Konserven Ind. *1930*, 306-7, 321-2.
20. Mehlitz, A. The preservation of fruit juices, sweet must, etc., Konserven Ind., *1930*, 742-4, 756-8.
21. Poore, H. D. Notes on pomegranate and rhubarb juices. Beverage J. *58*, 76 (Sept. 1922). Also Calif. Citrograph, *8*, 46 (Dec. 1922).
22. Power, F. B. and Chestnut, V. K. The odorous constituents of apples. Emanation of acetaldehyde from the ripe fruit. J. Amer. Chem. Soc. *42*, 1509 (1920).
23. Power, F. B. and Chesnut, V. K. The odorous constituents of apples *II*. Evidence of the presence of geraniol. J. Amer. Chem. Soc. *44*, 2938 (1922).
24. Rice, F. E. and Markley, A. L. Cider and its preservation. N. Y. State College of Agr. Cornell Extension Bul. 44 (1921).
25. Warcollier, G. Le cidre et sa fabrication rationelle. Ann. Brasserie et Distill., Ann. *15*, 237 (1912).

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1935 A STILL BIGGER YEAR FOR "ASTRINGENT" LEAD!

# WHO'S WHO IN POMOLOGY
## • NEW YORK •

In presenting "Who's Who in Pomology" for the state of New York one naturally thinks first of the Dean of American horticulturists, Liberty Hyde Bailey. Although retired from his former positions, he remains the premier personality in the state famed for its horticultural leaders. Author of many books and a beloved teacher, the contributions of this scientist have added greatly to the advancement of horticulture in America and the World and form the foundation for the work of the men active in the Empire state today.

### College of Agriculture and Agricultural Experiment Station at Cornell University, Ithaca

**Arthur John Heinicke,** Ph.D., Head, Dept. of Pomology, Cornell Univ.; Pomologist, Cornell Univ. Agr. Exp. Station. Research work dealing primarily with soil conditions in relation to fruit growing and with a study of the general physiology of fruit trees.

**Melvin Butler Hoffman,** Ph.D., Ext. Asst. Prof of Pomology, Cornell Univ.

**L. H. MacDaniels,** Ph.D., Prof. of Pomology, College of Agr., Cornell Univ. Special work in plant anatomy as related to fruit growing and pollination as an orchard problem.

**L. M. Massey,** Ph.D., Prof. and Head Dept. of Plant Pathology and Plant Pathologist, Cornell Univ. Agr. Exp. Station. Interested in control of diseases of fruits grown in New York State and in development of fungicides.

**Joseph Oskamp,** B.S., Ext. Prof. of Pomology, College of Agr., Cornell Univ. Principal lines of research: Orchard soil management, varieties, pruning, soils for fruit growing.

### Agricultural Experiment Station Geneva

**Karl Dietrick Brase,** B.S., Asst. in Research in Pomology. Plant propagation and rootstocks.

**P. J. Chapman,** Ph.D., Chief in Research in Entomology. Fruit insect pests of Hudson Valley and Lake Champlain Districts. Publications on apple maggot, insecticides, fruit tree leaf roller, leaf hopper, plum and apple curculios, spray residues.

**Reginald C. Collison,** M.S., In charge soil investigations in pomology. Many bulletins from the Station on soils, especially technical phases, with special reference to orchard nutrition and orchard soil management.

**Luster Manring Cooley,** M.S., Assoc. in Research in Plant Pathology, Div. of Botany. In charge experimental work on diseases and insect pests of small fruits in western New York. Special work has been with control of virus diseases of raspberries.

**D. M. Daniel,** Ph.D. Assoc. in Research in Entomology. Biological control investigations. Peach insects.

**Olav Einset,** M.S., Asst. in Research in Pomology. Engaged in pollination investigations and has published on such work in grapes, apples and cherries.

**Fred E. Gladwin,** B.S., Viticulturist, Agr. Exp. Station, Geneva; Asst. Prof of Pomology, College of Agr., Ithaca. Engaged in researches with the grape for past 25 years. Results of these investigations published in Station bulletins and in the agricultural press. Published "A History of Grape Growing in Eastern United States" as a serial in 1928.

**Hugh Glasgow,** Ph.D. Chief in Research in Entomology. Cherry, small fruit and other canning crops insects. Earlier publications on apple and pear insects.

**W. O. Gloyer,** M.A., Assoc. in Research, Plant Pathology. Investigation of fruit diseases.

**James M. Hamilton,** Ph.D., Assoc. in Research with title of Asst. Prof., in Hudson Valley Horticultural Investigations, State Agr. Exp. Station, Geneva. Plant Pathologist stationed at Hudson Valley Fruit Investigations Laboratory, Poughkeepsie. Investigations have been confined mainly to studies on apple scab and fungicides for its control.

**J. D. Harlan,** B.S., Asst. in Research in Pomology. Hop and pomological soil investigations.

**S. W. Harman,** M.S., Assoc. in Research in Entomology. Apple insect pest control, specializing on codling moth and spray residue.

**F. Z. Hartzell,** M.A., Assoc. in Research in Entomology. Pear and grape insects. Investigation of contact insecticides; tar washes.

**Ulysses Prentiss Hedrick,** D.Sc., Director of Station Publications: Numerous bulletins from Exp. Station; series of monographs on Grapes, Plums, Peaches, Cherries, Pears, and Small Fruits of New York; A Cyclopedia of Hardy Fruits; A Manual of American Grape Growing; Sturtevant's Notes on Edible Plants; A History of Agriculture in the State of New York.

**George H. Howe,** B.S., Assoc. in Research in Pomology. In charge testing of varieties of apples, pears and cherries and testing of thousands of seedlings of these fruits resulting from known crosses made in connection with the fruit breeding work carried on by the Station pomologists.

**F. G. Mundinger,** M.S., Assoc. in Research in Entomology. Pear and other fruit insects, particularly in relation to Hudson Valley district.

**Bernard R. Nebel,** D.Sc., Assoc. in Research in Pomology, Biologist, Cytologist.

**Percival John Parrott,** M.A., Vice-Director of Station. Publications: Apple Insects of New York; Pear Insects of New York; also numerous contributions on entomological topics.

**W. Howard Rankin,** Ph.D., Assoc. in Research, Plant Pathology. (On leave of absence 1935-36.) Small fruit diseases, particularly virus diseases of raspberries. Bulletins and circulars by the Station on mosiac diseases of raspberries.

**George L. Slate,** M.S., Assoc. in Research in Pomology. In charge pomological work with small fruits and nuts. Sec'y Northern Nut Growers Assn. Chief work: Breeding of raspberries, strawberries and filberts.

**Harold Bradford Tukey,** Ph. D., Chief in Research, Agr. Exp. Station, Geneva; Prof. of Pomology, Cornell Univ., Ithaca. Interested in general fruit culture, rootstocks, plant propagation and fruit development. Sec'y-Treas. Am. Society for Horticultural Science.

**L. M. Van Alstyne,** B.S., Asst. in Research in Pomology. Assisting in pomology and landscape work.

**Richard Wellington,** M.S., Head, Pomology Div., Agr. Exp. Station, Geneva; Prof., Cornell Univ., Ithaca. Assisted in compilation of Grapes, Plums and Cherries of New York; has published miscellaneous bulletins and articles on breeding of various fruits and vegetables.

### State Horticultural Society

**Lawrence Howard,** A.B., Pres., N.Y. State Horticultural Society, Kinderhook. Grower of apples and cherries.

**Roy Pierson McPherson,** LeRoy. Sec'y-Treas., N.Y. State Hort. Society and Manager of educational, fruit and commercial shows held each winter at Rochester and Kingston; Director, Regional Agr'l Credit Corp. of Albany; Pres. LeRoy Fruit Growers' Co-op. Assn. Fruit grower.

### Farm Bureau

**Herbert P. King,** Pres., N. Y. State Farm Bureau Federation, Trumansburg. Fruit grower.


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## RESULTS OF OTHER NUT CONTESTS

THE fall of 1934 was especially prolific in nut contests. In addition to the national contest sponsored by the Northern Nut Growers' Association and reported in a previous issue of this publication, two state contests were conducted—one in Ohio and the other in New York.

The Ohio contest which was conducted jointly by the *Ohio Farmer,* the Ohio Agricultural Experiment Station and the Ohio section of the Northern Nut Growers' Association brought to light a number of promising new hickories. Nearly 1,000 samples were entered in the contest, and prizes were awarded to the 10 best nuts, most of which were shagbarks. The prize winners were as follows: First, W. O. Whitney, Rt. No. 1, Berea, Ohio; second, P. E. Wilcox, Geneva, Ohio; third, Robert Haskell, Rt. No. 5, Norwalk, Ohio; fourth, Mrs. A. J. Rhinemiller, Rt. No. 2, Huron, Ohio; fifth, Mrs. Willis Reynolds, Rt. No. 1, Blanchester, Ohio; sixth, N. E. Bogue, Geneva, Ohio; seventh, Walter Netking, Rt. No. 1, Ravenna, Ohio; eighth, F. E. Ridiker, Brunswick, Ohio; ninth, Leonard Leach, Rt. No. 2, Winchester, Ohio; tenth, Eugene F. Cranz, Mt. Tom Farm, Ira, Ohio. Ten nuts were accorded honorable mention.

In the New York contest which was sponsored by the *American Agriculturist,* the College of Agriculture at Ithaca and the Experiment Station at Geneva and the New York section of the Northern Nut Growers' Association, 442 hickories and 132 black walnuts were entered from New York and New England. The prize winning hickories were submitted by the following individuals: First, DeWitt Davis, Dover Plains, N. Y.; second, Donald Lawyer, Dorloo, N. Y.; third, Mrs. Robert Platman, Penn Yan, N. Y.; fourth, Harry Kramer, Wayland, N. Y.; fifth, W. K. Hadselle, Hancock, Mass.; sixth, R. E. Newman, 205 Linden Ave., Ithaca, N. Y.; seventh, Mrs. Myles Standish Watson, Newington, Portsmouth, N. H.; eighth, N. W. Bostwick, Holcomb, N. Y.; ninth, N. E. Comins, Amherst, Mass.; tenth, Roland D. Fox, Fonda, N. Y.

The black walnut prize winners were as follows: First, C. H. Snyder, Rt. No. 2, Newfield, N. Y.; second, W. A. Benton, Wassaic, N. Y.; third, A. McPherson, Jr., Caledonia, N. Y.; fourth, Herman Wright, Rt. No. 2, Wolcott, N. Y.; fifth, Fred Coe, Rt. No. 5, Fulton, N. Y.; sixth, Clara Redmond, Elbridge, N. Y.; seventh, Albert W. Post, Charlotte Sta., Flynn Rd., Rochester, N. Y.; eighth, F. H. Cargill, Maple Ave., Newark Valley, N. Y.; ninth, F. S. Towers, Geneva Daily Times, Geneva, N. Y.; tenth, Alton Fellows, Corfu, N. Y.

Many of these nuts were unusually promising and should be tried by those interested in growing nuts in the North. Certainly they should be tried by those interested in the regions of the parent trees.

Information about the 1935 meeting of the Northern Nut Growers' Association September 9 and 10 at Rockport, Ind., will appear in the August issue of AMERICAN FRUIT GROWER. All who are interested in nut culture are invited to attend the meeting.

G. L. SLATE, *Sec'y,*
Geneva, N. Y.

## BROWN ROT CONTROL

*(Continued from page 7)*

sulphurs which contain no coloring matter. Experience indicates that from five to seven pounds of the pink sulphur may be used for each 100 gallons of spray solution with good control of brown rot and no excessive residue. No lime should be employed in conjunction with this material when it is used as a pre-harvest spray.

During the past two seasons in Virginia peach growers have experienced some loss from brown rot while the fruit was being harvested and while it was in transit. Due to this situation there was considerable demand for some inexpensive method to prevent these losses in the future. With this situation in mind, experiments were conducted to test the value of pre-harvest spraying as compared to dusting the fruit while it was passing over the grading equipment. These tests were confined to spraying the fruit just before it was to be harvested with a fine wettable sulphur, using a weak concentration of the sulphur fungicide and high pressure for its application. Other trials consisted of applying a fine non-wettable sulphur to the fruit as a dust during the packing process. The materials used for these trials were flotation sulphur dust and pink sulphur dust. These fungicides were applied with a dust chamber device attached to the grading equipment. Space will not permit a detailed discussion of the dust chamber equipment. It will suffice to say that this type of equipment seems very practical and can be installed at very little cost. The amount of material used in the dust chamber is very small in proportion to the number of peaches dusted.

A good many peach growers in Virginia installed dust chambers in their packing equipment during the 1934 packing season. The dust chambers used in 1934, however, were not entirely satisfactory because they were new and there had not been an opportunity to test them out previously under commercial conditions. Very soon this type of dusting equipment will be perfected and will be available in suitable units to be installed in the regular peach grading equipment. The pink sulphur dust is well adapted for use in these dust chambers and will afford the peach grower splendid protection against brown rot while the fruit is in transit at very low cost.

## AM. POMOLOGICAL SOCIETY

*(Continued from page 8)*

**ANNUAL MEETING AND FRUIT CONGRESS**

Hartford, Connecticut

**November 20, 21, 22, 1935**

Committees are already at work in Connecticut and New England making arrangements for the program and exhibition. A general meeting of committees is being arranged in connection with the summer meeting of the Connecticut Pomological Society July 31.

**National Apple Institute**

The prospectus of the National Apple Institute, referred to on page 10 of this issue, has been sent to the principal horticultural organizations in the apple growing states. Contributions to the promotion fund should be mailed to the treasurer, Harry D. Simpson, Vincennes, Ind.


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# STATE HORTICULTURAL NEWS

## Quaker State News

IT looks as if the apple crop in Pennsylvania this season will not be of bumper size. Those apple orchards or varieties which were pollinated previous to the long cold and rainy period in May or which were pollinated after that time have a crop if they bloomed heavily enough; those that bloomed in the bad weather seem to be setting very light. Many of the better orchards bore heavily last season, so this factor alone would tend to reduce the size of their theoretical crop. Staymans appear to be unusually light in southern and eastern Pennsylvania. The peach crop will apparently be fairly good; orchards on unfavorable sites have suffered from winter injury to the buds as well as some damage by frosts. There is also some winter injury of two winters ago showing up in some peach orchards.

*Field Days and Summer Meeting*

This is your last reminder of the Fruit Growers' Field Days to be held by the Division of Pomology, Department of Horticulture, State College, on July 29 and 30.

*Summer Tour*

This is likewise the last reminder before the Summer Tour which will start at Geneva, N. Y., on Wednesday, July 31, and wind up at Niagara Falls, probably Friday night, August 2. We assemble at the Horticultural Building, Experiment Station, Geneva, N. Y., on Wednesday afternoon, July 31. Detailed itineraries of the trip will be distributed there. For further information write:

R. H. SUDDS, *Sec'y*,
State College.

## Florida Fruit News

AFTER discouraging late season prices, Florida fruit growers are preparing for the next season. Although there will be some citrus fruit to be moved in July, the citrus season this year may be said to close with the end of June.

The quantity of citrus moved this year from Florida exceeded all expectations when loss due to freezing weather in the early part of the season is taken into consideration. Many packing houses handled more fruit than during any previous season. On the other hand, in certain areas, the amount was considerably less than that handled in former years.

With fertilizing operations nearly finished, growers are now forced to give attention to rust mite, which makes its appearance about this time every year, when fruit has reached the size of one inch in diameter. Due to the rapid spread of this pest, spraying operations always have to be forced in order to cover the areas affected in time to accomplish results. Rust, though apparently having little or no effect upon the quality of the fruit, causes the fruit to go into lower grade because of appearance and consequent less sales appeal.

ART STAFFORD.

## Horticultural News From the Tall Corn State

DUE to the drought of 1934, many apple trees in Iowa which bore heavily last year have shown little or no bloom this year. The exception to this rule is the Winesap which in many places is blooming heavily again this year. The government report for June 1 gives Iowa a 73 per cent apple crop. Many of us think this is about 10 per cent too high.

To date codling moth worms have been very slow to make an appearance. The peak of emergence of moths in central Iowa was about June 13, and southern Iowa, a little earlier. Very little scab is showing up

The rainfall from January 1 to the present has been a little better than normal at Des Moines and at some places considerably above normal. Young apple trees have already made as much as two feet of growth this season. No blight has been reported.

Iowa is co-operating with the Missouri River Apple Growers' Association in staging a Missouri Valley Apple Exposition to be held at St. Joseph, Mo., December 3, 4 and 5.

The Iowa State Fair will be held at Des Moines, August 21 to 30, 1935.

R. S. HERRICK, *Sec'y*,
Des Moines.

## Minnesota News

THE commercial red raspberry crop will be about 25 per cent above the low yield of 1934, but the total production still will be below normal because of heavy losses due to the 1934 drought. There is a heavy set of practically all varieties of apples. Wealthy comprises the bulk of the crop, although recent plantings in the southeast section of the state consist largely of Haralson, Delicious, Jonathan and McIntosh.

A summer meeting of the State Horticultural Society and this Association will be held at the University of Minnesota Fruit Breeding Farm near Excelsior on August 19. A fruit show will be held in connection with this meeting. Last year more than 400 attended. Horticulturists from neighboring states are specially invited to attend. There will be many new fruits to be seen at this time.

The legal definition of a bushel of apples in Minnesota has been changed from a weight to a measure, under the terms of a bill passed by the Minnesota legislature and approved by the Governor on April 24, 1935. This bill was introduced at the request of this Association and provides for a bushel of 2150.42 cubic inches in conformity with the U. S. Standard Container Act.

J. D. WINTER, *Sec'y*,
Minn. Fruit Growers Assn., St. Paul.

## Idaho Summer Meeting

THE Idaho State Horticultural Association will hold its summer meeting in Fruitland, Idaho, under the auspices of the Fruitland Fruit Association, July 10. A short, timely program consisting of subjects pertaining to the problems of marketing, fruit prospects, transportation, fruit washing and spraying will occupy most of the day, but the social features are strongly emphasized during the summer meeting in the form of a picnic lunch, general entertainment and band concert. Many commercial firms will put up exhibits on the grounds of the Fruitland High School. Fruitland is in the center of the apple production section of the state.

W. H. WICKS, *Sec'y*,
Boise.

# Booklets and Catalogs for the Asking

**Described on this page are a number of the booklets and catalogs on subjects of everyday interest to fruit growers which have been issued by AMERICAN FRUIT GROWER'S advertisers. Please indicate by number the particular ones in which you are interested.**

**Bees as Orchard Helpers**
1. Bees and Honey for Profit
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69. Every Grower's Pruning Guide
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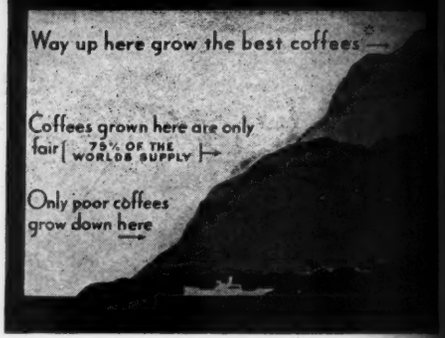
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